

REMARKS

Claims 1-2 and 4-7 are pending and under consideration in the above-identified application. Claim 3 was previously cancelled.

In the Office Action dated November 5, 2009, the Examiner rejected claims 1-2 and 4-7.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1 -2 and 5-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Oesten et al. (US 2001/0046628 A1) in view of Kawai et al. (U.S. 2003/0152839) and Spitler et al. (US 2004/0197657).

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Oesten et al. in view of Kawai et al., and Spitler et al. and Naruoka et al. (U.S. Patent No. 6,893,766).

Applicant respectfully traverses the above listed rejections.

Claims 1 and 5 require a coating layer that is adhered to the outer surface of an inner particle. The coating layer is a homogeneous lithium-titanium compound that has a single phase of polycrystalline spinel selected from the group consisting of selected from the group consisting of $\text{Li}_4\text{Ti}_5\text{O}_{12}$, Li_2TiO_3 , $\text{Li}_2\text{Ti}_3\text{O}_7$ and $\text{Li}_4\text{Ti}_{4.90}\text{Mn}_{0.10}\text{O}_{12}$. The coating required by the claims significantly improves the high temperature property of lithium nickel oxide without decreasing lithium ion conductivity. Specification, pages 6, 33-34 & Table 1.

As stated in prior responses, Oesten et al. does not teach or even fairly suggest the coating required by the claims. Oesten et al. teaches a lithium mixed oxide particle coated with a mixture of alkali metals and metal oxides. Oesten et al., paragraph [0033-0034], [0037]. A mixture is not the same as a compound. In fact, the specification points out that it was known to use a mixture of an alkali metal compound and a metal oxide as a coating, but that this method is different then using the compound oxide required by the claims. Specification, page 5.

The Examiner argues that the titanium oxide (TiO_2) taught by Oesten et al. meets the claim limitations. Office Action, page 4. However, the claims specifically require a coating that is a lithium-titanium compound selected from the group consisting of $\text{Li}_4\text{Ti}_5\text{O}_{12}$, Li_2TiO_3 , $\text{Li}_2\text{Ti}_3\text{O}_7$ and $\text{Li}_4\text{Ti}_{4.90}\text{Mn}_{0.10}\text{O}_{12}$. None of the compounds required by the claims are titanium oxide, or a mixture of titanium oxide and an alkali metal as taught by Oesten et al.

The Examiner also argues that it would have been obvious to require that the inner particle compound and the coating layer compound are mixed in a weight ratio that is between of 96:4 and 65:35 because optimization of a range is considered obvious when “the general conditions of the claim are disclosed in the prior art.” *In re Aller*, 220 F.3d 454 (CCPA 1955) emphasis added.

In *In re Aller*, the claimed process differed from the prior art only in the required temperature and acid concentration. Here, the prior art teaches an inner particle that is a lithium mixed oxide and an outer coating that is a mixture of alkali metal compounds and metal oxides. Oesten, [0033]. In contrast, the claimed invention requires a coating that is a lithium-titanium compound selected from the group consisting of $\text{Li}_4\text{Ti}_5\text{O}_{12}$, Li_2TiO_3 , $\text{Li}_2\text{Ti}_3\text{O}_7$ and $\text{Li}_4\text{Ti}_{4.90}\text{Mn}_{0.10}\text{O}_{12}$. As such, the general conditions of the claim are not disclosed in the prior art because the claimed invention differs from prior art in the actual coating material. As such because the general conditions of the claimed invention are not disclosed in the prior art, the weight ratio required by the claims can not be obvious.

Additionally, Applicant maintains that the combination Oesten et al. and Spittler et al. is improper hindsight. The Examiner suggests that the motivation to use lithium titanate as a coating is suggested because Spittler et al. teaches the use of lithium titanium spinel oxide as an active material which allows for extremely high charge and discharge rates and a large number

of charge and discharge cycles. Office Action, page 6. While lithium titanium spinel oxide may be an obvious substitution as an active material in another device, the Examiner has provided no reason why it would be an obvious substitution for a coating, aside from what could be considered improper hindsight reasoning. As such, the Examiner has provided no reason that would have prompted one of ordinary skill in the art to combine the elements and/or modify a reference(s) so as to reach the requirements of the claim; and shown no reasonable expectation of success of the combination and/or modification. MPEP § 2143; *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. ___, Slip Op No. 04-1350, 119 Fed. Appx. 282 (April 30, 2007). Indeed, mere hindsight is insufficient to demonstrate a motivation to combine, much less an expectation of success when the combination requires a change in function of the compound taught by the prior art, i.e. from an active material to a coating.

Thus, taken singularly or in combination with each other, the above cited references fail to either teach or even fairly suggest the required elements of independent claims 1 and 5. As such, claims 1 and 5 are patentable over the cited references, as are dependent claims 2, 3 and 4 for at least the same reasons. Accordingly, Applicant respectfully requests the above rejections be withdrawn. Additionally, Applicant requests that the rejection of dependent claim 4, which is based in part on Oesten et al. and Spitler et al. be withdrawn for at least the same reasons

II. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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